What is claimed is:

1.A method for predicting an amount of dimensional accuracy defect at the time of performing a press-forming of a metal sheet comprising:

setting a stress-strain relationship with respect to said metal sheet based on an elastic-perfectly plastic solid material model having a constant stress value after being yielded;

formulating a first prediction equation of an amount of dimensional accuracy defect using said stress-strain relationship based on said elastic-perfectly plastic solid material model;

setting a value which is equal to or below a tensile strength and exceeds a yield strength as an apparent yield strength with respect to said metal sheet;

formulating a second prediction equation of an amount of dimensional accuracy defect which considers work hardening by replacing a portion of said first prediction equation of an amount of dimensional accuracy defect corresponding to said yield strength with said apparent yield strength; and

obtaining a dimensional accuracy defect amount using said second prediction equation of an amount of dimensional accuracy defect which considers work hardening.

2. The method for predicting an amount of dimensional accuracy

defect according to claim 1, wherein said apparent yield strength is obtained by a following equation (1)

$$\sigma p' = k \cdot YS + (1 - k)TS \qquad (1)$$

where $\sigma p'$: apparent yield strength (MPa), YS: actually measured yield strength (MPa), TS: tensile strength (MPa), k: internal division coefficient.

3. The method for predicting an amount of dimensional accuracy defect according to claim 2, wherein said internal division coefficient k is set as a function of a ratio (TS/t) between said tensile strength TS and said sheet thickness t.

4. The method for predicting an amount of dimensional accuracy defect according to claim 1, wherein an amount of dimensional accuracy defect which is subjected to a prediction is a wall warp amount at the time of performing press-forming and said second prediction equation of an amount of dimensional accuracy defect which considers work hardening for obtaining said wall warp amount is a following equation (2)

$$\rho = \{(3\sigma p'/E \cdot t)\} \cdot \{1 - D \cdot [(\sigma_T/TS) - 0.3]^2\}$$
$$- C \cdot (rd - 5) \qquad (2)$$

where ρ = wall warp amount (curvature; 1/mm), $\sigma p'$: apparent yield strength (MPa), E: Young's modulus (MPa), t: sheet thickness(mm), TS: tensile strength (actually measured value;

MPa), σ_T: tension acting on wall portion (MPa), rd: radius of die shoulder of press forming tool (mm), C: constant($1/mm^2$), D: constant.

5. The method for predicting an amount of dimensional accuracy defect according to claim 4, wherein said apparent yield strength is obtained by a following equation (3)

$$\sigma p' = k \cdot YS + (1 - k)TS \qquad (3)$$

where $\sigma p'$: said apparent yield strength (MPa), YS: actually measured yield strength (MPa), TS: tensile strength (MPa), k: internal division coefficient.

6. The method for predicting an amount of dimensional accuracy defect according to claim 5, wherein said internal division coefficient k is obtained based on a following equation (4)

$$k = A \cdot (TS/t) + B \qquad (4)$$

where TS: said tensile strength, t: sheet thickness, A: negative constant(mm/MPa), B: positive constant.

7. The method for predicting an amount of dimensional accuracy defect according to claim 1, wherein an amount of dimensional accuracy defect which is subjected to a prediction is an angular change amount at the time of performing press-forming and said second prediction equation of an amount of dimensional accuracy

defect which considers work hardening for obtaining said angular change amount is comprised of following equations (5) and (6)

$$\Delta\theta = -\theta \cdot (rp + t/2) \cdot \Delta\rho \qquad (5)$$

$$\Delta\rho = (-3\sigma p'/E \cdot t) \cdot [1 + \exp(-G \cdot rp)] \qquad (6)$$

where $\Delta\theta$: angular change amount (degree), θ: bending angle (degree), rp: radius of shoulder of bending tool (mm), t: sheet thickness (mm), $\Delta\rho$: curvature change amount (1/mm), $\sigma p'$: apparent yield strength (MPa), E: Young's modulus (MPa), G: constant(mm).

8. The method for predicting an amount of dimensional accuracy defect according to claim 7, wherein said apparent yield strength is obtained by a following equation (7)

$$\sigma p' = k \cdot YS + (1 - k)TS \qquad (7)$$

where $\sigma p'$: said apparent yield strength (MPa), YS: actually measured yield strength (MPa), TS: tensile strength (MPa), k: internal division coefficient.

9. The method for predicting an amount of dimensional accuracy defect according to claim 8, wherein said internal division coefficient k is obtained based on a following equation (8)

$$k = A \cdot (TS/t) + B \qquad (8)$$

where TS: said tensile strength(MPa), t: sheet thickness(1/mm), A: negative constant(mm/MPa), B: positive constant.